

SEQUENCE LISTING

<110> Thomason, Arlen
Liu, Benxian

<120> Fibroblast Growth Factor-Like Polypeptides

<130> 99-371

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<170> PatentIn Ver. 2.0

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<212> DNA

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<222> (142)..(771)

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 Pro Pro Ala Pro Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro
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<213> Homo sapiens

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Asp Ser Ser Pro Leu Leu Gln Phe Gly Gly Gln Val Arg Gln Arg Tyr

35

40

45

Leu Tyr Thr Asp Asp Ala Gln Gln Thr Glu Ala His Leu Glu Ile Arg

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55

60

Glu Asp Gly Thr Val Gly Gly Ala Ala Asp Gln Ser Pro Glu Ser Leu

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70

75

80

Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu Gly Val

85

90

95

Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly Ala Leu Tyr Gly

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105

110

Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu Leu

115

120

125

Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro Leu

130

135

140

His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro Ala Pro Arg Gly

145

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160

Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro Ala Pro Pro Glu

165

170

175

Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val Gly Ser Ser Asp

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 Tyr Leu Tyr Thr Asp Asp Asp Gln Asp Thr Glu Ala His Leu Glu Ile
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 Val Lys Ala Ser Arg Phe Leu Cys Gln Gln Pro Asp Gly Ala Leu Tyr
 100 105 110

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 Gly Ser Pro His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu
 115 120 125

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Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro
130 135 140

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Leu Arg Leu Pro Gln Lys Asp Ser Pro Asn Gln Asp Ala Thr Ser Trp
145 150 155 160

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165 170 175

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Asp Gln Ala Gly Phe Leu Pro Pro Glu Pro Pro Asp Val Gly Ser Ser
180 185 190

gac ccc ctg agc atg gta gag cct tta cag ggc cga agc ccc agc tat 624
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195 200 205

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35 40 45

Tyr Leu Tyr Thr Asp Asp Asp Gln Asp Thr Glu Ala His Leu Glu Ile
50 55 60

Arg Glu Asp Gly Thr Val Val Gly Ala Ala His Arg Ser Pro Glu Ser
65 70 75 80

Leu Leu Glu Leu Lys Ala Leu Lys Pro Gly Val Ile Gln Ile Leu Gly
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Val Lys Ala Ser Arg Phe Leu Cys Gln Gln Pro Asp Gly Ala Leu Tyr
100 105 110

Gly Ser Pro His Phe Asp Pro Glu Ala Cys Ser Phe Arg Glu Leu Leu
115 120 125

Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His Gly Leu Pro
130 135 140

Leu Arg Leu Pro Gln Lys Asp Ser Pro Asn Gln Asp Ala Thr Ser Trp
145 150 155 160

Gly Pro Val Arg Phe Leu Pro Met Pro Gly Leu Leu His Glu Pro Gln
165 170 175

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35 40 45

Pro Glu Ser Leu Leu Gln Leu Lys Ala Leu Lys Pro Gly Val Ile Gln
50 55 60

Ile Leu Gly Val Lys Thr Ser Arg Phe Leu Cys Gln Arg Pro Asp Gly
65 70 75 80

Ala Leu Tyr Gly Ser Leu His Phe Asp Pro Glu Ala Cys Ser Phe Arg
85 90 95

Glu Leu Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His
 100 105 110

Gly Leu Pro Leu His Leu Pro Gly Asn Lys Ser Pro His Arg Asp Pro
 115 120 125

Ala Pro Arg Gly Pro Ala Arg Phe Leu Pro Leu Pro Gly Leu Pro Pro
 130 135 140

Ala Pro Pro Glu Pro Pro Gly Ile Leu Ala Pro Gln Pro Pro Asp Val
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Pro Ser Tyr Ala Ser
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 35 40 45

Pro Glu Ser Leu Leu Glu Leu Lys Ala Leu Lys Pro Gly Val Ile Gln
 50 55 60

Ile Leu Gly Val Lys Ala Ser Arg Phe Leu Cys Gln Gln Pro Asp Gly
 65 70 75 80

Ala Leu Tyr Gly Ser Pro His Phe Asp Pro Glu Ala Cys Ser Phe Arg
 85 90 95

Glu Leu Leu Leu Glu Asp Gly Tyr Asn Val Tyr Gln Ser Glu Ala His
 100 105 110

Gly Leu Pro Leu Arg Leu Pro Gln Lys Asp Ser Pro Asn Gln Asp Ala

115 120 125
 Thr Ser Trp Gly Pro Val Arg Phe Leu Pro Met Pro Gly Leu Leu His
 130 135 140
 Glu Pro Gln Asp Gln Ala Gly Phe Leu Pro Pro Glu Pro Pro Asp Val
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20 25 30

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35 40 45

Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu
50 55 60

Ser Val Gly Glu Val Tyr Ile Lys Ser Thr Glu Thr Gly Gln Tyr Leu
65 70 75 80

Ala Met Asp Thr Asp Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu
85 90 95

Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr
100 105 110

Ile Ser Lys Lys His Ala Glu Lys Asn Trp Phe Val Gly Leu Lys Lys
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35 40 45

Phe Ser Lys Val Arg Phe Cys Ser Gly Arg Lys Arg Pro Val Arg Arg
50 55 60

Arg Pro Glu Pro Gln Leu Lys Gly Ile Val Thr Arg Leu Phe Ser Gln
65 70 75 80

Gln Gly Tyr Phe Leu Gln Met His Pro Asp Gly Thr Ile Asp Gly Thr
85 90 95

Lys Asp Glu Asn Ser Asp Tyr Thr Leu Phe Asn Leu Ile Pro Val Gly
100 105 110

Leu Arg Val Val Ala Ile Gln Gly Val Lys Ala Ser Leu Tyr Val Ala
115 120 125

Met Asn Gly Glu Gly Tyr Leu Tyr Ser Ser Asp Val Phe Thr Pro Glu
 130 135 140

Cys Lys Phe Lys Glu Ser Val Phe Glu Asn Tyr Tyr Val Ile Tyr Ser
 145 150 155 160

Ser Thr Leu Tyr Arg Gln Gln Glu Ser Gly Arg Ala Trp Phe Leu Gly
 165 170 175

Leu Asn Lys Glu Gly Gln Ile Met Lys Gly Asn Arg Val Lys Lys Thr
 180 185 190

Lys Pro Ser Ser His Phe Val Pro Lys Pro Ile Glu Val Cys Met Tyr
 195 200 205

Arg Glu Pro Ser Leu His Glu Ile Gly Glu Lys Gln Gly Arg Ser Arg
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Lys Ser Ser Gly Thr Pro Thr Met Asn Gly Gly Lys Val Val Asn Gln
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Asp Ser Thr

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<212> PRT

<213> Homo sapiens

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 35 40 45

Ser Lys Val Arg Ile Phe Gly Leu Lys Lys Arg Arg Leu Arg Arg Gln
 50 55 60

Asp Pro Gln Leu Lys Gly Ile Val Thr Arg Leu Tyr Cys Arg Gln Gly
 65 70 75 80

Tyr Tyr Leu Gln Met His Pro Asp Gly Ala Leu Asp Gly Thr Lys Asp

Val Asp Gly Val Arg Glu Lys Ser Asp Pro His Ile Lys Leu Gln Leu
50 55 60

Gln Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala Asn
65 70 75 80

Arg Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys
85 90 95

Val Thr Asp Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn Tyr
100 105 110

Asn Thr Tyr Arg Ser Arg Lys Tyr Thr Ser Trp Tyr Val Ala Leu Lys
115 120 125

Arg Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln Lys
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Ala Ile Leu Phe Leu Pro Met Ser Ala Lys Ser
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<212> PRT

<213> Homo sapiens

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20 25 30

Gly Gly Val Tyr Glu His Leu Gly Gly Ala Pro Arg Arg Arg Lys Leu
35 40 45

Tyr Cys Ala Thr Lys Tyr His Leu Gln Leu His Pro Ser Gly Arg Val
50 55 60

Asn Gly Ser Leu Glu Asn Ser Ala Tyr Ser Ile Leu Glu Ile Thr Ala
65 70 75 80

Val Glu Val Gly Ile Val Ala Ile Arg Gly Leu Phe Ser Gly Arg Tyr
85 90 95

Leu Ala Met Asn Lys Arg Gly Arg Leu Tyr Ala Ser Glu His Tyr Ser
100 105 110

Ala Glu Cys Glu Phe Val Glu Arg Ile His Glu Leu Gly Tyr Asn Thr
115 120 125

Tyr Ala Ser Arg Leu Tyr Arg Thr Val Ser Ser Thr Pro Gly Ala Arg
130 135 140

Arg Gln Pro Ser Ala Glu Arg Leu Trp Tyr Val Ser Val Asn Gly Lys
145 150 155 160

Gly Arg Pro Arg Arg Gly Phe Lys Thr Arg Arg Thr Gln Lys Ser Ser
165 170 175

Leu Phe Leu Pro Arg Val Leu Asp His Arg Asp His Glu Met Val Arg
180 185 190

Gln Leu Gln Ser Gly Leu Pro Arg Pro Pro Gly Lys Gly Val Gln Pro
195 200 205

Arg Arg Arg Arg Gln Lys Gln Ser Pro Asp Asn Leu Glu Pro Ser His
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Val Gln Ala Ser Arg Leu Gly Ser Gln Leu Glu Ala Ser Ala His
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<213> Homo sapiens

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Thr Ala Pro Asn Gly Thr Leu Glu Ala Glu Leu Glu Arg Arg Trp Glu
35 40 45

Ser Leu Val Ala Leu Ser Leu Ala Arg Leu Pro Val Ala Ala Gln Pro
50 55 60

Lys Glu Ala Ala Val Gln Ser Gly Ala Gly Asp Tyr Leu Leu Gly Ile
65 70 75 80

Lys Arg Leu Arg Arg Leu Tyr Cys Asn Val Gly Ile Gly Phe His Leu

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Gln	Ala	Leu	Pro	Asp	Gly	Arg	Ile	Gly	Gly	Ala	His	Ala	Asp	Thr	Arg						
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Asp	Ser	Leu	Leu	Glu	Leu	Ser	Pro	Val	Glu	Arg	Gly	Val	Val	Ser	Ile						
		115					120					125									
Phe	Gly	Val	Ala	Ser	Arg	Phe	Phe	Val	Ala	Met	Ser	Ser	Lys	Gly	Lys						
	130					135					140										
Leu	Tyr	Gly	Ser	Pro	Phe	Phe	Thr	Asp	Glu	Cys	Thr	Phe	Lys	Glu	Ile						
145					150					155					160						
Leu	Leu	Pro	Asn	Asn	Tyr	Asn	Ala	Tyr	Glu	Ser	Tyr	Lys	Tyr	Pro	Gly						
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Met	Phe	Ile	Ala	Leu	Ser	Lys	Asn	Gly	Lys	Thr	Lys	Lys	Gly	Asn	Arg						
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Val	Ser	Pro	Thr	Met	Lys	Val	Thr	His	Phe	Leu	Pro	Arg	Leu								
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Ser	Ala	Trp	Ala	His	Gly	Glu	Lys	Arg	Leu	Ala	Pro	Lys	Gly	Gln	Pro						
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Gly	Pro	Ala	Ala	Thr	Asp	Arg	Asn	Pro	Ile	Gly	Ser	Ser	Ser	Arg	Gln						
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Trp	Ser	Pro	Ser	Gly	Arg	Arg	Thr	Gly	Ser	Leu	Tyr	Cys	Arg	Val	Gly						
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Ile Gly Phe His Leu Gln Ile Tyr Pro Asp Gly Lys Val Asn Gly Ser
100 105 110

His Glu Ala Asn Met Leu Ser Val Leu Glu Ile Phe Ala Val Ser Gln
115 120 125

Gly Ile Val Gly Ile Arg Gly Val Phe Ser Asn Lys Phe Leu Ala Met
130 135 140

Ser Lys Lys Gly Lys Leu His Ala Ser Ala Lys Phe Thr Asp Asp Cys
145 150 155 160

Lys Phe Arg Glu Arg Phe Gln Glu Asn Ser Tyr Asn Thr Tyr Ala Ser
165 170 175

Ala Ile His Arg Thr Glu Lys Thr Gly Arg Glu Trp Tyr Val Ala Leu
180 185 190

Asn Lys Arg Gly Lys Ala Lys Arg Gly Cys Ser Pro Arg Val Lys Pro
195 200 205

Gln His Ile Ser Thr His Phe Leu Pro Arg Phe Lys Gln Ser Glu Gln
210 215 220

Pro Glu Leu Ser Phe Thr Val Thr Val Pro Glu Lys Lys Asn Pro Pro
225 230 235 240

Ser Pro Ile Lys Ser Lys Ile Pro Leu Ser Ala Pro Arg Lys Asn Thr
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Asn Ser Val Lys Tyr Arg Leu Lys Phe Arg Phe Gly
260 265

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<212> PRT

<213> Homo sapiens

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Gly Met Val Val Pro Ser Pro Ala Gly Thr Arg Ala Asn Asn Thr Leu
35 40 45

Leu Asp Ser Arg Gly Trp Gly Thr Leu Leu Ser Arg Ser Arg Ala Gly
50 55 60

Leu Ala Gly Glu Ile Ala Gly Val Asn Trp Glu Ser Gly Tyr Leu Val
65 70 75 80

Gly Ile Lys Arg Gln Arg Arg Leu Tyr Cys Asn Val Gly Ile Gly Phe
85 90 95

His Leu Gln Val Leu Pro Asp Gly Arg Ile Ser Gly Thr His Glu Glu
100 105 110

Asn Pro Tyr Ser Leu Leu Glu Ile Ser Thr Val Glu Arg Gly Val Val
115 120 125

Ser Leu Phe Gly Val Arg Ser Ala Leu Phe Val Ala Met Asn Ser Lys
130 135 140

Gly Arg Leu Tyr Ala Thr Pro Ser Phe Gln Glu Glu Cys Lys Phe Arg
145 150 155 160

Glu Thr Leu Leu Pro Asn Asn Tyr Asn Ala Tyr Glu Ser Asp Leu Tyr
165 170 175

Gln Gly Thr Tyr Ile Ala Leu Ser Lys Tyr Gly Arg Val Lys Arg Gly
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Ser Lys Val Ser Pro Ile Met Thr Val Thr His Phe Leu Pro Arg Ile
195 200 205

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<212> PRT

<213> Homo sapiens

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Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile		
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Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp		
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Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Asn Tyr Asn		
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Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly		
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Val Glu Ser Glu Phe Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr		
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Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu		
130	135	140
Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Asn Gly		
145	150	155 160
Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Ile Pro Val Arg Gly		
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Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala		
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Ile Thr		

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<212> PRT

<213> Homo sapiens

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35 40 45

Pro Ala Val Thr Asp Leu Asp His Leu Lys Gly Ile Leu Arg Arg Arg
 50 55 60
 Gln Leu Tyr Cys Arg Thr Gly Phe His Leu Glu Ile Phe Pro Asn Gly
 65 70 75 80
 Thr Ile Gln Gly Thr Arg Lys Asp His Ser Arg Phe Gly Ile Leu Glu
 85 90 95
 Phe Ile Ser Ile Ala Val Gly Leu Val Ser Ile Arg Gly Val Asp Ser
 100 105 110
 Gly Leu Tyr Leu Gly Met Asn Glu Lys Gly Glu Leu Tyr Gly Ser Glu
 115 120 125
 Lys Leu Thr Gln Glu Cys Val Phe Arg Glu Gln Phe Glu Glu Asn Trp
 130 135 140
 Tyr Asn Thr Tyr Ser Ser Asn Leu Tyr Lys His Val Asp Thr Gly Arg
 145 150 155 160
 Arg Tyr Tyr Val Ala Leu Asn Lys Asp Gly Thr Pro Arg Glu Gly Thr
 165 170 175
 Arg Thr Lys Arg His Gln Lys Phe Thr His Phe Leu Pro Arg Pro Val
 180 185 190
 Asp Pro Asp Lys Val Pro Glu Leu Tyr Lys Asp Ile Leu Ser Gln Ser
 195 200 205

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<212> PRT

<213> Mus musculus

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 Asn Leu Pro Leu Gly Asn Tyr Lys Lys Pro Lys Leu Leu Tyr Cys Ser
 20 25 30
 Asn Gly Gly His Phe Leu Arg Ile Leu Pro Asp Gly Thr Val Asp Gly
 35 40 45

Thr Arg Asp Arg Ser Asp Gln His Ile Gln Leu Gln Leu Ser Ala Glu
50 55 60

Ser Ala Gly Glu Val Tyr Ile Lys Gly Thr Glu Thr Gly Gln Tyr Leu
65 70 75 80

Ala Met Asp Thr Glu Gly Leu Leu Tyr Gly Ser Gln Thr Pro Asn Glu
85 90 95

Glu Cys Leu Phe Leu Glu Arg Leu Glu Glu Asn His Tyr Asn Thr Tyr
100 105 110

Thr Ser Lys Lys His Ala Glu Lys Asn Trp Phe Val Gly Leu Lys Lys
115 120 125

Asn Gly Ser Cys Lys Arg Gly Pro Arg Thr His Tyr Gly Gln Lys Ala
130 135 140

Ile Leu Phe Leu Pro Leu Pro Val Ser Ser Asp
145 150 155

<210> 25

<211> 245

<212> PRT

<213> Mus musculus

<400> 25

Met Thr Ala Ala Ile Ala Ser Ser Leu Ile Arg Gln Lys Arg Gln Ala
1 5 10 15

Arg Glu Arg Glu Lys Ser Asn Ala Cys Lys Cys Val Ser Ser Pro Ser
20 25 30

Lys Gly Lys Thr Ser Cys Asp Lys Asn Lys Leu Asn Val Phe Ser Arg
35 40 45

Val Lys Leu Phe Gly Ser Lys Lys Arg Arg Arg Arg Arg Pro Glu Pro
50 55 60

Gln Leu Lys Gly Ile Val Thr Lys Leu Tyr Ser Arg Gln Gly Tyr His
65 70 75 80

Leu Gln Leu Gln Ala Asp Gly Thr Ile Asp Gly Thr Lys Asp Glu Asp
85 90 95

Ser Thr Tyr Thr Leu Phe Asn Leu Ile Pro Val Gly Leu Arg Val Val

100	105	110
Ala Ile Gln Gly Val Gln Thr Lys Leu Tyr Leu Ala Met Asn Ser Glu		
115	120	125
Gly Tyr Leu Tyr Thr Ser Glu His Phe Thr Pro Glu Cys Lys Phe Lys		
130	135	140
Glu Ser Val Phe Glu Asn Tyr Tyr Val Thr Tyr Ser Ser Met Ile Tyr		
145	150	155
Arg Gln Gln Gln Ser Gly Arg Gly Trp Tyr Leu Gly Leu Asn Lys Glu		
165	170	175
Gly Glu Ile Met Lys Gly Asn His Val Lys Lys Asn Lys Pro Ala Ala		
180	185	190
His Phe Leu Pro Lys Pro Leu Lys Val Ala Met Tyr Lys Glu Pro Ser		
195	200	205
Leu His Asp Leu Thr Glu Phe Ser Arg Ser Gly Ser Gly Thr Pro Thr		
210	215	220
Lys Ser Arg Ser Val Ser Gly Val Leu Asn Gly Gly Lys Ser Met Ser		
225	230	235
His Asn Glu Ser Thr		
245		

<210> 26

<211> 247

<212> PRT

<213> Mus musculus

<400> 26

Met Ala Ala Ala Ile Ala Ser Gly Leu Ile Arg Gln Lys Arg Gln Ala
1 5 10 15

Arg Glu Gln His Trp Asp Arg Pro Ser Ala Ser Arg Arg Arg Ser Ser
20 25 30

Pro Ser Lys Asn Arg Gly Leu Phe Asn Gly Asn Leu Val Asp Ile Phe
35 40 45

Ser Lys Val Arg Ile Phe Gly Leu Lys Lys Arg Arg Leu Arg Arg Gln
50 55 60

Asp Pro Gln Leu Lys Gly Ile Val Thr Arg Leu Tyr Cys Arg Gln Gly
65 70 75 80

Tyr Tyr Leu Gln Met His Pro Asp Gly Ala Leu Asp Gly Thr Lys Asp
85 90 95

Asp Ser Thr Asn Ser Thr Leu Phe Asn Leu Ile Pro Val Gly Leu Arg
100 105 110

Val Val Ala Ile Gln Gly Val Lys Thr Gly Leu Tyr Ile Ala Met Asn
115 120 125

Gly Glu Gly Tyr Leu Tyr Pro Ser Glu Leu Phe Thr Pro Glu Cys Lys
130 135 140

Phe Lys Glu Ser Val Phe Glu Asn Tyr Tyr Val Ile Tyr Ser Ser Met
145 150 155 160

Leu Tyr Arg Gln Gln Glu Ser Gly Arg Ala Trp Phe Leu Gly Leu Asn
165 170 175

Lys Glu Gly Gln Val Met Lys Gly Asn Arg Val Lys Lys Thr Lys Pro
180 185 190

Ala Ala His Phe Leu Pro Lys Pro Leu Glu Val Ala Met Tyr Arg Glu
195 200 205

Pro Ser Leu His Asp Val Gly Glu Thr Val Pro Lys Ala Gly Val Thr
210 215 220

Pro Ser Lys Ser Thr Ser Ala Ser Ala Ile Met Asn Gly Gly Lys Pro
225 230 235 240

Val Asn Lys Cys Lys Thr Thr
245

<210> 27

<211> 154

<212> PRT

<213> Mus musculus

<400> 27

Met Ala Ala Ser Gly Ile Thr Ser Leu Pro Ala Leu Pro Glu Asp Gly
1 5 10 15

Gly Ala Ala Phe Pro Pro Gly His Phe Lys Asp Pro Lys Arg Leu Tyr
20 25 30

Cys Lys Asn Gly Gly Phe Phe Leu Arg Ile His Pro Asp Gly Arg Val
35 40 45

Asp Gly Val Arg Glu Lys Ser Asp Pro His Val Lys Leu Gln Leu Gln
50 55 60

Ala Glu Glu Arg Gly Val Val Ser Ile Lys Gly Val Cys Ala Asn Arg
65 70 75 80

Tyr Leu Ala Met Lys Glu Asp Gly Arg Leu Leu Ala Ser Lys Cys Val
85 90 95

Thr Glu Glu Cys Phe Phe Phe Glu Arg Leu Glu Ser Asn Asn Tyr Asn
100 105 110

Thr Tyr Arg Ser Arg Lys Tyr Ser Ser Trp Tyr Val Ala Leu Lys Arg
115 120 125

Thr Gly Gln Tyr Lys Leu Gly Ser Lys Thr Gly Pro Gly Gln Lys Ala
130 135 140

Ile Leu Phe Leu Pro Met Ser Ala Lys Ser
145 150

<210> 28

<211> 245

<212> PRT

<213> Mus musculus

<400> 28

Met Gly Leu Ile Trp Leu Leu Leu Leu Ser Leu Leu Glu Pro Ser Trp
1 5 10 15

Pro Thr Thr Gly Pro Gly Thr Arg Leu Arg Arg Asp Ala Gly Gly Arg
20 25 30

Gly Gly Val Tyr Glu His Leu Gly Gly Ala Pro Arg Arg Arg Lys Leu
35 40 45

Tyr Cys Ala Thr Lys Tyr His Leu Gln Leu His Pro Ser Gly Arg Val
50 55 60

Asn Gly Ser Leu Glu Asn Ser Ala Tyr Ser Ile Leu Glu Ile Thr Ala
65 70 75 80

Val Glu Val Gly Val Val Ala Ile Lys Gly Leu Phe Ser Gly Arg Tyr

	85		90		95
Leu Ala Met Asn Lys Arg Gly Arg Leu Tyr Ala Ser Asp His Tyr Asn	100		105		110
Ala Glu Cys Glu Phe Val Glu Arg Ile His Glu Leu Gly Tyr Asn Thr	115		120		125
Tyr Ala Ser Arg Leu Tyr Arg Thr Gly Ser Ser Gly Pro Gly Ala Gln	130		135		140
Arg Gln Pro Gly Ala Gln Arg Pro Trp Tyr Val Ser Val Asn Gly Lys	145		150		155
Gly Arg Pro Arg Arg Gly Phe Lys Thr Arg Arg Thr Gln Lys Ser Ser	165		170		175
Leu Phe Leu Pro Arg Val Leu Gly His Lys Asp His Glu Met Val Arg	180		185		190
Leu Leu Gln Ser Ser Gln Pro Arg Ala Pro Gly Glu Gly Ser Gln Pro	195		200		205
Arg Gln Arg Arg Gln Lys Lys Gln Ser Pro Gly Asp His Gly Lys Met	210		215		220
Glu Thr Leu Ser Thr Arg Ala Thr Pro Ser Thr Gln Leu His Thr Gly	225		230		235
Gly Leu Ala Val Ala	245				

<210> 29

<211> 202

<212> PRT

<213> Mus musculus

<400> 29

Met Ala Lys Arg Gly Pro Thr Thr Gly Thr Leu Leu Pro Arg Val Leu	1	5	10	15
Leu Ala Leu Val Val Ala Leu Ala Asp Arg Gly Thr Ala Ala Pro Asn	20	25	30	
Gly Thr Arg His Ala Glu Leu Gly His Gly Trp Asp Gly Leu Val Ala	35	40	45	

Arg Ser Leu Ala Arg Leu Pro Val Ala Ala Gln Pro Pro Gln Ala Ala
50 55 60

Val Arg Ser Gly Ala Gly Asp Tyr Leu Leu Gly Leu Lys Arg Leu Arg
65 70 75 80

Arg Leu Tyr Cys Asn Val Gly Ile Gly Phe His Leu Gln Val Leu Pro
85 90 95

Asp Gly Arg Ile Gly Gly Val His Ala Asp Thr Arg Asp Ser Leu Leu
100 105 110

Glu Leu Ser Pro Val Gln Arg Gly Val Val Ser Ile Phe Gly Val Ala
115 120 125

Ser Arg Phe Phe Val Ala Met Ser Ser Arg Gly Lys Leu Phe Gly Val
130 135 140

Pro Phe Phe Thr Asp Glu Cys Lys Phe Lys Glu Ile Leu Leu Pro Asn
145 150 155 160

Asn Tyr Asn Ala Tyr Glu Ala Tyr Ala Tyr Pro Gly Met Phe Met Ala
165 170 175

Leu Ser Lys Asn Gly Arg Thr Lys Lys Gly Asn Arg Val Ser Pro Thr
180 185 190

Met Lys Val Thr His Phe Leu Pro Arg Leu
195 200

<210> 30

<211> 264

<212> PRT

<213> Mus musculus

<400> 30

Met Ser Leu Ser Leu Leu Phe Leu Ile Phe Cys Ser His Leu Ile His
1 5 10 15

Ser Ala Tyr Ala His Gly Glu Lys Arg Leu Thr Pro Glu Gly Gln Pro
20 25 30

Ala Pro Pro Arg Asn Pro Gly Asp Ser Ser Gly Ser Arg Gly Arg Ser
35 40 45

Ser Ala Thr Phe Ser Ser Ser Ser Ala Ser Ser Pro Val Ala Ala Ser
50 55 60

Pro Gly Ser Gln Gly Ser Gly Ser Glu His Ser Ser Phe Gln Trp Ser
65 70 75 80

Pro Ser Gly Arg Arg Thr Gly Ser Leu Tyr Cys Arg Val Gly Ile Gly
85 90 95

Phe His Leu Gln Ile Tyr Pro Asp Gly Lys Val Asn Gly Ser His Glu
100 105 110

Ala Ser Val Leu Ser Ile Leu Glu Ile Phe Ala Val Ser Gln Gly Ile
115 120 125

Val Gly Ile Arg Gly Val Phe Ser Asn Lys Phe Leu Ala Met Ser Lys
130 135 140

Lys Gly Lys Leu His Ala Ser Ala Lys Phe Thr Asp Asp Cys Lys Phe
145 150 155 160

Arg Glu Arg Phe Gln Glu Asn Ser Tyr Asn Thr Tyr Ala Ser Ala Ile
165 170 175

His Arg Thr Glu Lys Thr Gly Arg Glu Trp Tyr Val Ala Leu Asn Lys
180 185 190

Arg Gly Lys Ala Lys Arg Gly Cys Ser Pro Arg Val Lys Pro Gln His
195 200 205

Val Ser Thr His Phe Leu Pro Arg Phe Lys Gln Ser Glu Gln Pro Glu
210 215 220

Leu Ser Phe Thr Val Thr Val Pro Glu Lys Lys Lys Pro Pro Val Lys
225 230 235 240

Pro Lys Val Pro Leu Ser Gln Pro Arg Arg Ser Pro Ser Pro Val Lys
245 250 255

Tyr Arg Leu Lys Phe Arg Phe Gly
260

<210> 31

<211> 208

<212> PRT

<213> Mus musculus

<400> 31

Met Ala Leu Gly Gln Arg Leu Phe Ile Thr Met Ser Arg Gly Ala Gly

1 5 10 15

Arg Val Gln Gly Thr Leu Gln Ala Leu Val Phe Leu Gly Val Leu Val
20 25 30

Gly Met Val Val Pro Ser Pro Ala Gly Ala Arg Ala Asn Gly Thr Leu
35 40 45

Leu Asp Ser Arg Gly Trp Gly Thr Leu Leu Ser Arg Ser Arg Ala Gly
50 55 60

Leu Ala Gly Glu Ile Ser Gly Val Asn Trp Glu Ser Gly Tyr Leu Val
65 70 75 80

Gly Ile Lys Arg Gln Arg Arg Leu Tyr Cys Asn Val Gly Ile Gly Phe
85 90 95

His Leu Gln Val Pro Pro Asp Gly Arg Ile Ser Gly Thr His Glu Glu
100 105 110

Asn Pro Tyr Ser Leu Leu Glu Ile Ser Thr Val Glu Arg Gly Val Val
115 120 125

Ser Leu Phe Gly Val Lys Ser Ala Leu Phe Ile Ala Met Asn Ser Lys
130 135 140

Gly Arg Leu Tyr Thr Thr Pro Ser Phe His Asp Glu Cys Lys Phe Arg
145 150 155 160

Glu Thr Leu Leu Pro Asn Asn Tyr Asn Ala Tyr Glu Ser Asp Leu Tyr
165 170 175

Arg Gly Thr Tyr Ile Ala Leu Ser Lys Tyr Gly Arg Val Lys Arg Gly
180 185 190

Ser Lys Val Ser Pro Ile Met Thr Val Thr His Phe Leu Pro Arg Ile
195 200 205

<210> 32

<211> 194

<212> PRT

<213> Mus musculus

<400> 32

Met Arg Lys Trp Ile Leu Thr Arg Ile Leu Pro Thr Leu Leu Tyr Arg
 1 5 10 15
 Ser Cys Phe His Leu Val Cys Leu Val Gly Thr Ile Ser Leu Ala Cys
 20 25 30
 Asn Asp Met Ser Pro Glu Gln Thr Ala Thr Ser Val Asn Cys Ser Ser
 35 40 45
 Pro Glu Arg His Thr Arg Ser Tyr Asp Tyr Met Glu Gly Gly Asp Ile
 50 55 60
 Arg Val Arg Arg Leu Phe Cys Arg Thr Gln Trp Tyr Leu Arg Ile Asp
 65 70 75 80
 Lys Arg Gly Lys Val Lys Gly Thr Gln Glu Met Lys Asn Ser Tyr Asn
 85 90 95
 Ile Met Glu Ile Arg Thr Val Ala Val Gly Ile Val Ala Ile Lys Gly
 100 105 110
 Val Glu Ser Glu Tyr Tyr Leu Ala Met Asn Lys Glu Gly Lys Leu Tyr
 115 120 125
 Ala Lys Lys Glu Cys Asn Glu Asp Cys Asn Phe Lys Glu Leu Ile Leu
 130 135 140
 Glu Asn His Tyr Asn Thr Tyr Ala Ser Ala Lys Trp Thr His Ser Gly
 145 150 155 160
 Gly Glu Met Phe Val Ala Leu Asn Gln Lys Gly Ile Pro Val Lys Gly
 165 170 175
 Lys Lys Thr Lys Lys Glu Gln Lys Thr Ala His Phe Leu Pro Met Ala
 180 185 190
 Ile Thr

<210> 33
 <211> 208
 <212> PRT
 <213> Mus musculus

<400> 33
 Met Ala Pro Leu Gly Glu Val Gly Ser Tyr Phe Gly Val Gln Asp Ala
 1 5 10 15

Val Pro Phe Gly Asn Val Pro Val Leu Pro Val Asp Ser Pro Val Leu
 20 25 30
 Leu Asn Asp His Leu Gly Gln Ser Glu Ala Gly Gly Leu Pro Arg Gly
 35 40 45
 Pro Ala Val Thr Asp Leu Asp His Leu Lys Gly Ile Leu Arg Arg Arg
 50 55 60
 Gln Leu Tyr Cys Arg Thr Gly Phe His Leu Glu Ile Phe Pro Asn Gly
 65 70 75 80
 Thr Ile Gln Gly Thr Arg Lys Asp His Ser Arg Phe Gly Ile Leu Glu
 85 90 95
 Phe Ile Ser Ile Ala Val Gly Leu Val Ser Ile Arg Gly Val Asp Ser
 100 105 110
 Gly Leu Tyr Leu Gly Met Asn Glu Lys Gly Glu Leu Tyr Gly Ser Glu
 115 120 125
 Lys Leu Thr Gln Glu Cys Val Phe Arg Glu Gln Phe Glu Glu Asn Trp
 130 135 140
 Tyr Asn Thr Tyr Ser Ser Asn Leu Tyr Lys His Val Asp Thr Gly Arg
 145 150 155 160
 Arg Tyr Tyr Val Ala Leu Asn Lys Asp Gly Thr Pro Arg Glu Gly Thr
 165 170 175
 Arg Thr Lys Arg His Gln Lys Phe Thr His Phe Leu Pro Arg Pro Val
 180 185 190
 Asp Pro Asp Lys Val Pro Glu Leu Tyr Lys Asp Ile Leu Ser Gln Ser
 195 200 205

<210> 34

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Random primer

with Not I restriction site for first strand cDNA
synthesis

<400> 34

ggaaggaaaa aagcggccgc aacannnnnn nnn

33

<210> 35

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer for
first strand cDNA synthesis

<400> 35

aatccgatgc ccacgttgca gta

23

<210> 36

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer for
amplification of cDNA

<400> 36

aaaatcttag accgacgact gtgttt

26

<210> 37

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer for
amplification of cDNA

<400> 37

gagtctccgc agccttttga gg

22

<210> 38

<211> 34

<212> DNA

<213> Homo sapiens

<400> 38

actggcgccc gcagggcatca tcccagttga ggag

34

<210> 39

<211> 36

<212> DNA

<213> Homo sapiens

<400> 39

actggtcact cgaggggtacc ttagctagcc cccggg

36

<210> 40

<211> 29

<212> PRT

<213> Mus musculus

<400> 40

Met Glu Trp Met Arg Ser Arg Val Gly Thr Leu Gly Leu Trp Val Arg
1 5 10 15

Leu Leu Leu Ala Val Phe Leu Leu Gly Val Tyr Gln Ala
20 25

<210> 41

<211> 28

<212> PRT

<213> Homo sapiens

<400> 41

Met Asp Ser Asp Glu Thr Gly Phe Glu His Ser Gly Leu Trp Val Ser
1 5 10 15

Val Leu Ala Gly Leu Leu Leu Gly Ala Cys Gln Ala
20 25